

CytoSorb can support Kidney and Hepatic function in Severe Septic Shock from Leptospirosis

Paolo Lentini MD, PhD, FASN

Dept of Nephrology , AULSS7 Pedemontana, Bassano del Grappa (VI), Italy

Introduction

This study describes a clinical intervention for patients with leptospirosis-related septic shock, specifically focusing on those with acute kidney injury (AKI) and acute liver failure (ALF). The approach combined continuous venovenous hemofiltration (CVVH) with CytoSorb therapy, aiming to reduce the need for vasopressors and improve blood chemistry parameters, such as bilirubin, creatinine, white blood cells (WBC), and C-reactive protein (CRP).

Methods

11 male patients, average age 57 years, were enrolled. All patients had severe AKI (Stage 3) and ALF (MELD Score > 16 or bilirubin > 20 mg/dL). All patients were mechanically ventilated and supported with inotropes. Combined treatment of CVVH and CytoSorb was used: CVVH: 150 ml/min flow rate, dialysis dose at least 40 ml/kg/h (70% pre-dilution). CytoSorb: Cartridge replaced every 24 hours for three consecutive cycles. Anticoagulation: Citrate used in 4 patients.

Results

The starting conditions appeared homogeneous (Saps II 78 ± 6 , SOFA 15 ± 5 , Apache II 34 ± 6) with high total bilirubin values (>20 mg/dl) and high inflammation indices (WBC, PCR, ESR). There was a significant improvement in vital signs, including reduced vasopressor requirements and improved ventilatory performance. Blood chemistry improved, with a 37.4% reduction in total bilirubin and notable improvements in other markers (creatinine, WBC, PCR). All 11 patients survived, with a prolonged ICU stay (average 31 days).

Conclusion

This combination therapy (CVVH and CytoSorb) was both safe and effective in improving liver and kidney function in patients with leptospirosis-related septic shock, AKI, and ALF. The study suggests that CVVH combined with CytoSorb could be a viable and effective treatment option for critically ill patients with leptospirosis, particularly those with multi-organ failure. The observed reduction in vasopressor doses and improvement in blood chemistry supports the role of this treatment protocol in enhancing organ function and recovery.